EPOXY TECHNOLOGY

DATA SHEET

EPO-TEK.

353ND

High Temperature Epoxy

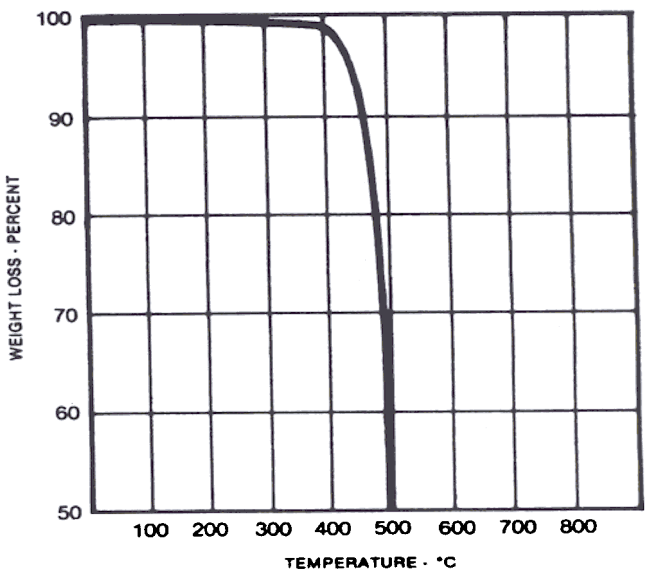
Rev. IX
9/01

TYPICAL PROPERTIES

(To be used as a guideline only)

NUMBER OF COMPONENTS	Two
MIXING RATIO	PARTS BY WEIGHT
Part "A"	10
Part "B" (hardener)	1
Keep containers closed when not in use	
Mixed volume should not exceed 25 grams	
CURE SCHEDULE (minimum)	
150°C	1 minute
120°C	2-5 minutes
100°C	5-10 minutes
80°C	15-30 minutes
PHYSICAL PROPERTIES	
Color	Amber
Consistency	Pourable liquid
Viscosity (mixed)	
@ 50 rpm/23°C	3,000 - 5,000 cPs
Specific Gravity	
Part "A"	1.20
Part "B"	1.02
Glass Transition Temp. (Tg)	
cured @ 150°C/1 hour	120°C
Coefficient of Thermal Expansion (CTE)	
Below Tg	54 x 10^{-6} in/in/°C
Above Tg	160 x 10^{-6} in/in/°C
Operating Temp.Range..	- 50 to + 200°C continuous
Degradation Temp. (TGA)	400°C
Outgas @ 200°C	0.8%
@ 250°C	1.2%
Shore D Hardness	87
Lap Shear Strength @ 25°C (Al to Al)	2,000 psi
Flexural Strength	10,600 psi
Compressive Strength	20,200 psi
Storage Modulus	435,000 psi
Impact Resistance (ASTM-D-256-56) ..	0.38 ft/lb.-in.
Moisture Resistance: (MIL-1-16923-D)	
(7 days@ 96% RH) Weight/1 hr/100°C	0.03%
Flammability:	Federal Std. 406
Method 2021	Self Extinguishing
OPTICAL PROPERTIES	
Index of Refraction	1.560
Spectral Transmission	
>50% @ 500 nm	
>95% @ 700-2μ	
ELECTRICAL/THERMAL PROPERTIES	
Thermal Conductivity	0.34 W/m°K
Thermal Shock Resistance	Passed
1000 cycles - 55°C to 150°C	
POT LIFE	4 hours
SHELF LIFE	
One (1) year when stored at room temperature	
REFRIGERATION IS NOT REQUIRED	

NONTOXIC - complies with USP Class VI biocompatibility standards



THERMAL STABILITY AS DETERMINED BY THERMOGRAVIMETRI ANALYSIS IN AIR AT A SCAN RATE OF 20°C/min.

EPO-TEK 353ND is a two component, 100% solids, heat curing epoxy designed for high temperature applications. Although EPO-TEK 353ND will perform continuously at 200°C, it will also endure +300-400°C for several minutes. EPO-TEK 353ND has excellent resistance to many types of solvents and chemicals and is ideal for bonding fiber optics, metals, glass, ceramics and most plastics.

Some unique features of EPO-TEK 353ND are: long pot life, good handling characteristics, low dermatetic response, excellent wicking into fiber optic bundles, and conveniently changes color from amber to dark red upon cure.

EPO-TEK 353ND is recommended to be used only in thin or thick film applications. Other applications where extra thick sections are needed, it is recommended to gel the system at room temperature or slightly above room temperature followed by a short post cure at elevated temperature.

EPO-TEK 353ND can be applied by brush, dipping, pouring or mechanical dispensing techniques.

Based on outgassing test results by NASA, EPO-TEK 353ND is approved for space flight programs.

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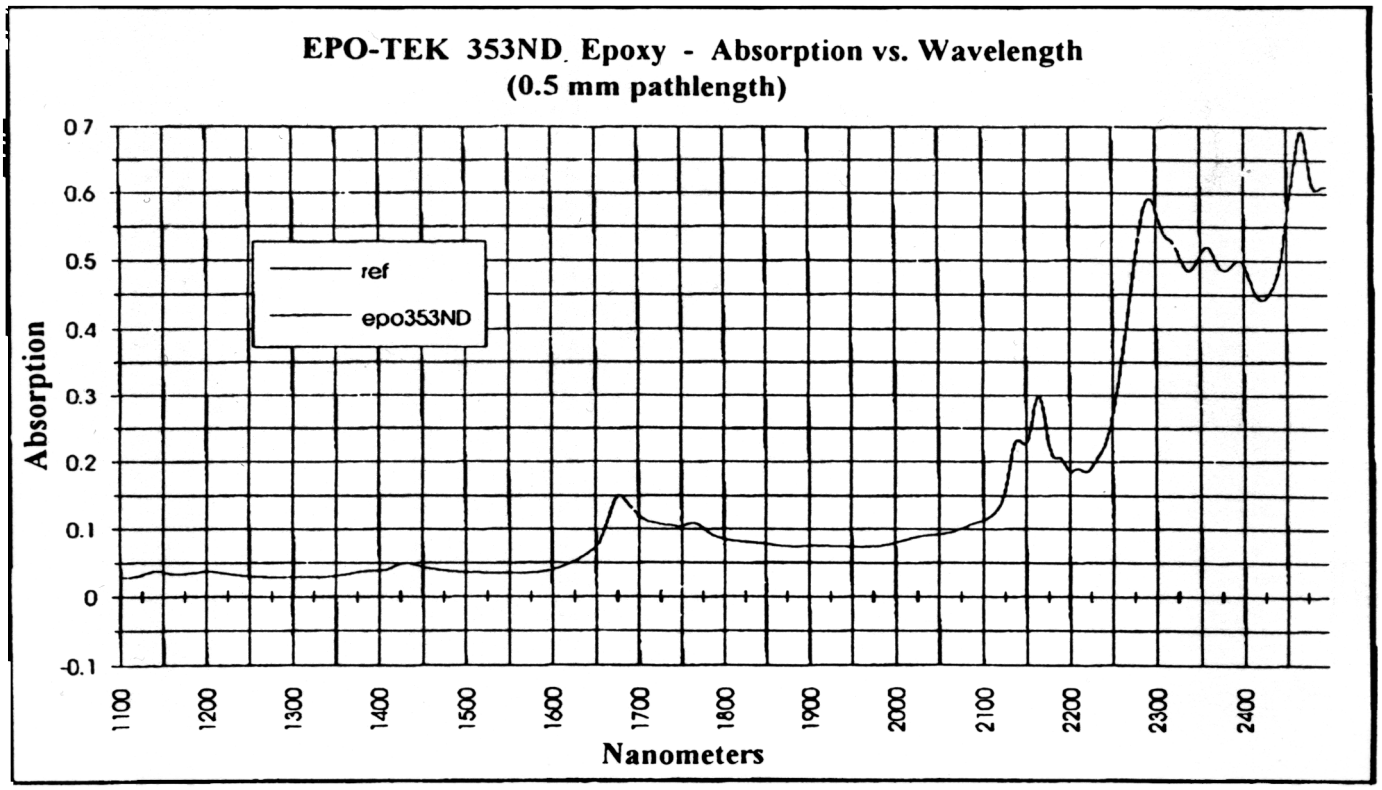
EPO-TEK 353ND Epoxy - Absorption vs. Wavelength
(0.5 mm pathlength)
Absorption
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
ref
epo353ND
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
Nanometers